Approved

Enrollment No: IU2181810242

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INDUS UNIVERSITY

X/BB0303/004

INDUS UNIVERSITY

IIMS

Constituent Institutes of Indus University

Semester:	III	Branch: UG	Program : IMBA(5Y) / BBA Aviation
END SEMESTER EXAMINATION – November 2022			
Subject Code:	BB0303	Subject Name:	Introduction to Business Statistics
Date:	18-11-22	Time:	9:30 am to 12:30 pm
Day:	Friday	Total Marks:	100

Instructions:

1. Attempt all questions
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicates full marks

Q.1 A (i) Calculate Median, First and Third quartiles from the data given below. **07**

Time (in min)	5-9	10-14	15-19	20-24	25-29
No. of workers	3	8	4	2	1

A (ii) Write short note on measures of central tendency. **03**

B (i) The administrator of a Georgia hospital surveyed the number of days 200 randomly chosen patients stayed in the hospital following an operation. The data are: **07**

Hospital stay in days	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24
Frequency	18	90	44	21	9	9	4	5

Calculate the standard deviation.

B (ii) Explain Standard deviation and Coefficient of Variation. **03**

Q.2 A (i) Find the Karl Pearson's coefficient of correlation from the following data: **07**

Cost	39	65	62	90	82	75	25	98	36	78
Sales	47	53	58	86	62	68	60	91	51	84

A (ii) Explain Correlation analysis. **03**

B (i) The ranking of 10 students in accordance with their performance in two subjects A and B are as follows: Calculate the rank coefficient of correlation coefficient and comment on its value. **07**

A	6	5	3	10	2	4	9	7	8	1
B	3	8	4	9	1	6	10	7	5	2

B (ii) Write all types of Correlation analysis with examples: **03**

Q.3	A (i)	The following data relate to the advertising expenditure and their corresponding sales (Rs. in crore). (i) Determine the least squares regression equation of Sales on Advertising Expenditure. (ii)Estimate the value of sales corresponding to advertising expenditure of Rs. 30 lakh.	07

Advertising Expenditure	10	12	15	23	20
Sales	14	17	23	25	21

	A (ii)	Explain Regression Analysis.	03
	B (i)	The information about advertising expenditure and sales are given below: Calculate two regression lines.	07

	Adv. Exp	**Sales**
Mean	20	120
Standard Deviation	5	25
Correlation coefficient	0.8	

	B (ii)	Write all properties of Regression Analysis.	03
Q.4	A (i)	An urn contains 75 marbles: 35 are blue, and 25 of these blue marbles are swirled. The rest of them are red, and 30 of the red ones are swirled. The marbles that are not swirled are clear. What is the probability of drawing: 1. A blue marble from the urn? 2. A clear marble from the urn? 3. A blue, swirled marble? 4. A red, clear marble? 5. A swirled marble?	07
	A (ii)	Explain the concept of Probability.	03
	B (i)	During a study of auto accidents, the Highway Safety Council found that 60 percent of all accidents occur at night, 52 percent are alcohol-related, and 37 percent occur at night and are alcohol-related. 1) What is the probability that an accident was alcohol-related, given that it occurred at night? 2) What is the probability that an accident occurred at night, given that it was alcohol-related?	07
	B (ii)	Write all types of Probability with formula.	03
Q.5		**Any Four (05*4=20)**	20
	A	The following data give the ages and blood pressure of 10 women. Determine the least squares regression equation of blood pressure on age.	05

Age	56	42	36	47	49	42	60	72	63	55
B.P	147	125	118	128	145	140	155	160	149	150

	B	The wights of the Baltimore Bullets professional football team have a mean of 224 pounds with a standard deviation of 18 pounds. While the mean weight and standard deviation of their Sunday opponent, the Chicago Trailblazers, are 195 and 12, respectively. Which team exhibits the greater relative dispersion in weights?	05
	C	Define Time Series Analysis. Explain in brief the components of Time Series analysis.	05

D	Find the Karl Pearson's coefficient of correlation from the following data: **X** 23 27 28 28 29 30 **Y** 18 20 22 27 21 29	05
E	**(i)** From a well-shuffled pack of 52 cards, a card is drawn at random. Find the probability that it is an ace or a heart. **(ii)** A store receives 3 Red, 6 White and 7 Blue shirts. Two shirts are randomly drawn. Determine the probability that (a) both shirts are white (b) one shirt is red and the other is white.	05
F	Define Forecasting and its techniques.	05